About Your Surgery to Treat Bile Duct Tumors

This information will tell you how to prepare for your surgery to remove tumors in your bile duct at Memorial Sloan Kettering (MSK), and help you understand what to expect during your recovery.

About Your Bile Ducts

Bile is a substance that helps you digest food. It’s made in your liver and travels through your bile ducts.

Figure 1. The liver and bile duct system
Your bile ducts have many small branches in your liver, like a tree. They join to form the common bile duct (see Figure 1). The bile travels through your bile ducts, from your liver and gallbladder to the first part of your small intestine (the duodenum).

If a tumor blocks your bile duct, the bile does not empty into your small intestine. Instead, it’s absorbed into your bloodstream. Symptoms of a blocked bile duct are yellow skin color (jaundice), itching, pale-colored stools, and dark (tea-colored) urine.

You can have surgery on your bile ducts to remove a tumor blocking the flow of bile.

**About Your Surgery**

The tumor can either be high in your bile duct and closer to your liver, in the middle of your bile duct, or low in your bile-duct, closer to your duodenum and pancreas (see Figure 2).
The surgery that you will have depends on the size and location of the tumor in your bile duct. This will be determined by your surgeon at the time of your surgery.

There are several types of surgeries to remove tumors in the bile ducts. On average, these surgeries take 3 to 5 hours.

**Bile-duct removal with reconstruction and liver resection for tumors high in the bile-ducts**

In order to remove the entire tumor, the common bile duct and the gallbladder are removed. Your body will function normally without your gallbladder.

In this surgery, your surgeon will attach a piece of your small intestine to your remaining bile duct. This will allow the bile to flow directly from your liver into your small intestines.

Sometimes, the tumor involves the liver. If it does, your surgeon will take out a piece of your liver. Your nurse will give you a resource *About Your Liver Surgery* that explains your resection.

**Bile-duct removal with reconstruction for mid to high bile-duct tumors**

In order to remove the entire tumor, the common bile duct will be removed.

Your surgeon will attach a piece of your small intestine to your remaining bile duct. This allows the bile to flow directly from the liver into the small intestines.

Your surgeon may also need to take out a piece of your liver, pancreas, gallbladder, and small intestine. Your nurse will give you more information about this surgery.

**Bile-duct removal for low bile-duct tumors with possible Whipple procedure**

In order to remove the entire tumor, your surgeon will need to remove the head of the pancreas, the duodenum, the end of the common bile duct, and the gallbladder. A small portion of your stomach may also be removed. If you are having this surgery, your nurse will also give you a resource *About Your Whipple Procedure*. 
Biliary enteric bypass (going around the tumor in your bile ducts)

If your tumor can’t be removed, your surgeon will attach a piece of your small intestine directly to your bile duct. This allows the bile to go around the tumor and flow from your liver to your small intestine.

Before Your Surgery

Presurgical testing

You will have an appointment for presurgical testing (PST). The date, time, and location of your PST appointment will be printed on the appointment reminder from your surgeon’s office.

You can eat and take your usual medications the day of your PST appointment. During your appointment, you will meet with a nurse practitioner (NP) who works closely with anesthesiology staff (specialized doctors and nurses who will give you medication to put you to sleep during your surgery).

Your NP will review your medical and surgical history with you. You will have tests done, including an electrocardiogram (EKG) to check your heart rhythm, a chest x-ray, blood tests, and any other tests necessary to plan your care. Your NP may also recommend you see other healthcare providers.

Your NP will discuss which medications you should take the morning of your surgery.

Please bring the following with you to your PST appointment:

- A list of all the medications you are taking, including patches and creams.
- Results of any tests done outside of MSK, such as a cardiac stress test, echocardiogram (echo), or carotid Doppler study.
- The name(s) and telephone number(s) of your doctor(s).

You will also get resources called Getting Ready for Surgery, Common Medications Containing Aspirin and Other Nonsteroidal Anti-inflammatory Drugs (NSAIDs), and Herbal Remedies and Cancer Treatment. These resources have more instructions about how to prepare for your surgery.
Purchase Hibiclens® Skin Cleanser
Hibiclens is a skin cleanser that kills germs for 24 hours after using it. Showering with Hibiclens before surgery will help reduce your risk of infection after surgery. You can buy Hibiclens at your local pharmacy without a prescription.

Purchase Supplies for Bowel Preparation, if Needed
If you need to do a bowel preparation before your surgery, your nurse will tell you how to do it. You will need the following supplies:

- 1 (5 mg) tablet of bisacodyl (Dulcolax®). These are usually sold as a box of 10 tablets.
- 1 (238 gram) bottle of polyethylene glycol (MiraLAX)
- 1 (64-ounce) bottle of a clear liquid

**1 Day Before Your Surgery**

**Drink only clear liquids**
You will need to follow a clear liquid diet the day before your surgery. Examples of clear liquids are listed in the table below. While you are on this diet:

- Don’t eat any solid foods.
- Make sure to drink plenty of liquids other than water, coffee, and tea. Try to drink at least 1 (8-ounce) glass of a clear liquid every hour while you’re awake.

<table>
<thead>
<tr>
<th>Drink</th>
<th>Do Not Drink</th>
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<tr>
<td><strong>Soups</strong></td>
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<tr>
<td>- Clear broth, bouillon or consommé</td>
<td>Any products with any particles of dried food or seasoning</td>
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<td><strong>Sweets</strong></td>
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<td>- Gelatin, such as Jell-O®</td>
<td>All others</td>
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<td>- Flavored Ices</td>
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<tr>
<td><strong>Drinks</strong></td>
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<tr>
<td>- Clear fruit juices such as apple, cranberry, lemonade, or grape</td>
<td>- Nectars</td>
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<tr>
<td>- Soda, such as ginger ale, 7-Up®, Sprite®, seltzer</td>
<td>- Milk</td>
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<td></td>
<td>- Alcoholic beverages</td>
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Start bowel preparation, if needed

If your surgeon or nurse told you that you will need to do a bowel preparation, you will need to start it 1 day before your surgery. During your bowel preparation:

- Don’t eat any solid foods.
- Make sure to drink plenty of liquids other than water, decaffeinated black coffee, and decaffeinated tea. Try to drink at least 1 (8-ounce) glass every hour while you’re awake.

On the morning before your surgery, mix all 238 grams of MiraLAX with the 64 ounces of clear liquid until the MiraLAX powder dissolves. Once the MiraLAX is dissolved, you can put the mixture in the refrigerator, if you prefer.

The MiraLAX will cause frequent bowel movements, so be sure to be near a bathroom the evening before your surgery or procedure.

At 3:00 pm on the day before your surgery, take 1 bisacodyl tablet by mouth with a glass of water.

At 5:00 pm on the day before your surgery, start drinking the MiraLAX bowel preparation. Drink 1 (8-ounce) glass of the mixture every 15 minutes until the container is empty. When you’re finished drinking the MiraLAX, drink 4 to 6 glasses of clear liquids. You can continue to drink clear liquids until midnight, but it is not required.

Apply zinc oxide ointment or Desitin® to the skin around your anus after every bowel movement. This helps prevent irritation.

Note the time of your surgery

A clerk from the Admitting Office will call you after 2:00 PM the day before your surgery. The clerk will tell you what time you should arrive for your surgery. If you are scheduled for surgery on a Monday, you will be called on the Friday
before. If you do not receive a call by 7:00 PM, please call 212-639-5014.

On the day of your surgery, go to:

MSK Presurgical Center (PSC)
1275 York Avenue (between East 67th and East 68th Streets) New York, NY
B elevator to 6th floor

**Shower with Hibiclens**

The night before your surgery, shower using Hibiclens. To use Hibiclens, open the bottle and pour some solution into your hand or a washcloth. Move away from the shower stream to avoid rinsing off the Hibiclens too soon. Rub it gently over your body from your neck to your waist and rinse.

Don’t let the solution get into your eyes, ears, mouth, or genital area. Don’t use any other soap. Dry yourself off with a clean towel after your shower.

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**Instructions for eating and drinking before your surgery**

- Do not eat anything after midnight the night before your surgery. This includes hard candy and gum.
- Between midnight and up until 2 hours before your scheduled arrival time, you may drink a total of 12 ounces of water (see figure).
- Starting 2 hours before your scheduled arrival time, do not eat or drink anything. This includes water.

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**The Day of Your Surgery**

**Shower with Hibiclens**

Shower using Hibiclens just before you leave. Use the Hibiclens the same way you did the night before. Don’t use any other soap. Don’t put on any lotion, cream, powder, deodorant, makeup, or perfume after your shower.
Things to remember

- Take only the medications your doctor told you to take the morning of your procedure. Take them with a few sips of water.
- Don’t put on any lotion, cream, deodorant, powder, makeup, or perfume.
- Don’t wear any metal objects. Remove all jewelry, including body piercings.
- Leave all valuables, such as credit cards and jewelry, at home.
- If you wear contacts, wear your glasses instead.

What to bring with you

- A list of the medications you take at home.
- Your rescue inhaler (such as albuterol for asthma), if you have one.
- A case for your personal items, such as eyeglasses, hearing aid(s), dentures, prosthetic device(s), wig, and religious articles, if you have it.
- Your Health Care Proxy form, if you have completed one.

Where to park

Parking at MSK is available in the garage on East 66th Street between York and First Avenues. To reach the garage, turn onto East 66th Street from York Avenue. The garage is located about a quarter of a block in from York Avenue, on the right-hand (north) side of the street. There is a pedestrian tunnel that you can walk through that connects the garage to the hospital. If you have questions about prices, call 212-639-2338.

There are also garages located on East 69th Street between First and Second Avenues, East 67th Street between York and First Avenues, and East 65th Street between First and Second Avenues.

What to expect

You will be asked to state and spell your name and date of birth many times. This is for your safety. People with the same or similar name may be having surgery on the same day.

A nurse will meet with you before your surgery. Tell your nurse the dose of any
medications (including patches and creams) you took after midnight and the time you took them.

Once your nurse has seen you, 1 or 2 visitors can keep you company as you wait for your surgery to begin. When it’s time for your surgery, your visitor(s) will be shown to the waiting area.

You will walk into the operating room or you can be taken in on a stretcher. A member of the operating room team will help you onto the operating bed. Compression boots will be placed on your lower legs. These gently inflate and deflate to help circulation in your legs.

Your anesthesiologist will place an intravenous (IV) line into a vein, usually in your arm or hand. The IV line will be used to give you fluids and anesthesia (medication to make you sleep) during your surgery. Once you are fully asleep, a breathing tube will be placed through your mouth and into your windpipe to help you breathe.

After Your Surgery

In the hospital

When you wake up, you will be in the Post-Anesthesia Care Unit (PACU). Most people stay in the PACU overnight for observation.

When you wake up after the operation you may have the following:

- An IV line to give you fluids.
- A Foley® catheter in your bladder to monitor the amount of urine you are making. The Foley should be removed 2 or 3 days after your surgery.
- Compression boots on your lower legs to help your circulation. They will be taken off when you’re able to walk.
- A pain pump called a patient-controlled analgesia (PCA) device. For more information, read Patient-Controlled Analgesia (PCA).
- A nasogastric (NG) tube that is placed through your nose into your stomach. It drains secretions from your stomach and allows your stomach and intestines time to heal. The tube is usually removed on the first or second day after your surgery.
• A biliary drainage tube to drain bile. The tube is usually taken out a few days after your surgery, but some people may go home with it still in place. If you go home with the tube, your case manager will arrange for a visiting nurse to help you care for it at home.

After your stay in the PACU, you will be taken to your hospital room in the inpatient unit. There, your nurse will tell you how to recover from your surgery. Below are examples of ways you can help yourself recover safely.

• It’s important to walk around after surgery. Walking every 2 hours is a good goal. This will help prevent blood clots in your legs and help to stimulate your bowel. Someone from the nursing staff will help you until you’re able to walk on your own. You’ll be taught how to get out of bed without causing pain to your incisions (surgical cuts).

• Use your incentive spirometer. This will help your lungs expand, which prevents pneumonia. For more information, read How to Use Your Incentive Spirometer.

Most people are in the hospital for 5 to 7 days after this surgery.

Managing your pain
You may have pain at your incision sites. Your doctor and nurse will ask you about your pain often and give you medication as needed. If your pain is not relieved, tell your doctor or nurse. It’s important to control your pain so you can cough, breathe deeply, use your incentive spirometer, and get out of bed and walk.

Eating and drinking
You will not be allowed to eat for the first day or two following the surgery. You will then be on a clear liquid diet. After that, you will slowly go back to your regular diet.

Many people lose weight before surgery. You will regain the weight slowly as your appetite improves. Also, you may gain weight right after surgery because your body will hold on to water for a few days afterwards.

At home
Before you go home, your doctor or nurse will give you instructions and
prescriptions for any medications that you need. Your nurse will review these instructions with you and give you a copy to keep. If you need a visiting nurse at home, arrangements will be made before you’re sent home.

**Fatigue**

It is very common to feel fatigued (unusually tired or weak) for up to 6 to 8 weeks after your surgery. Some of this fatigue is because of the surgery, and some is because of the weight you may have lost before you had the surgery. This will slowly improve over time.

Try to increase your activity level every day to help your fatigue. Get up, get dressed, and walk. Gradually increase the distance you walk each day. You may take a nap during the day, if you need. However, try to stay out of bed as much as possible so you will sleep at night. Your nurse will give you the resource *Managing Cancer-related Fatigue*.

**Managing Pain**

You may get a prescription for pain medication. Take your medication as instructed by your doctor and as needed.

Do not drive or drink alcohol while you’re taking prescription pain medication. Your doctor will tell you when you can resume driving.

As your incision heals, you’ll have less pain and need less pain medication. A mild pain reliever such as acetaminophen (Tylenol®) or ibuprofen (Advil®) will relieve aches and discomfort. However, large quantities of acetaminophen may be harmful to your liver. Do not take more acetaminophen than the amount directed on the bottle or as instructed by your doctor or nurse.

**Constipation**

Pain medication may cause constipation (having fewer bowel movements than what is normal for you). To help prevent constipation, drink 8 (8-ounce) glasses (2 liters) of liquids daily, if you can. Slowly increase the fiber in your diet to 25 to 35 grams per day. Fruits, vegetables, whole grains, and cereals contain fiber.

You may also get a prescription for docusate sodium (Colace®) 100 mg. Take _____ capsules _____ times a day. This is a stool softener that causes few side effects. Do not take it with mineral oil.
If you become constipated, take 2 Senna (Senokot®) tablets at bedtime. This is a stimulant laxative, which can cause cramping.

If you haven’t had a bowel movement in 2 days, call your doctor or nurse

**Caring for your incision**

The location of your incision will depend on the type of surgery you had. It’s normal to have numbness of the skin around the incision because some of the nerves were cut. This sensation will get better over time.

- If any fluid is draining from your incision, you should write down the amount and color. Call your doctor’s office and speak with the nurse about any drainage from your incision.
- Change your bandages at least once a day and more often if they become wet with drainage. When there is no longer any drainage coming from your incisions, they can be left uncovered.
- If you go home with Steri-Strips™ on your incision, they will loosen and fall off by themselves. If they haven’t fallen off within 10 days, you may remove them.
- If you go home with glue over your sutures (stitches), it will also loosen and peel off, similarly to the Steri-Strips.

**Activity**

Exercise will help you gain strength and feel better. Walking and stair climbing are good forms of exercise. Slowly increase the distance you walk. Ask your doctor or nurse before starting more strenuous exercises.

Check with your doctor before you do any heavy lifting. Normally, you should not lift anything heavier than 10 pounds (4.5 kilograms) for at least 6 weeks.

We also recommend that you do exercises that help you to stretch the incision. They also work on the muscles that have been cut during surgery. To do these exercises:

1. Stand in place and slowly lean backward. This stretches the abdominal incision.
2. Return to the starting position and lean over to one side.
3. Return to the starting position and lean to the other side.

Repeat these exercises a few times a day. They will help to reduce any discomfort from the surgery.

**Follow-up visit**

In general, the first follow-up visit with your doctor will be 10 to 14 days after you’re sent home. Call your doctor’s office to schedule an appointment.

**Call Your Doctor or Nurse if You Have:**

- Chills
- A temperature of 101° F (38.3° C) or higher
- Jaundice (yellow skin or eyes)
- Itching
- Redness or drainage from your incision
- Any sudden increase in pain or new pain
- Nausea
- Vomiting
- Diarrhea
- Constipation that is not relieved within 2 or 3 days
- Any new or unexplained symptom
- Any questions or concerns

If you have any questions or concerns, talk with a member of your healthcare team. You can reach them Monday through Friday from 9:00 AM to 5:00 PM at ____________________. After 5:00 PM, during the weekend, and on holidays, please call____________________. If there’s no number listed, or you’re not sure, call 212-639-2000.

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